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Marshall Space Flight Center



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Standardization and Qualification of Computer Programs for Circuit Design

A report has been compiled of information that may provide a means of efficiently feeding input data such as electrical network descriptions into general network analysis programs. The report on standardization methods for circuit design problems presents a comparison of program capabilities. It features currently available electrical circuit analyses programs and a study program on data structures. The principal objectives in making the study were to investigate the characteristics of major circuit analysis computer programs, the compatibility of CAD programs, and to evaluate programs for possible inclusion in a general analysis compiler. Also, investigations were made pertaining to the principal characteristics of circuit formulation techniques, methods of analysis, and output capabilities.

The practical importance of the study was in the development of theoretical tools to prove the equivalence of data representations. This is especially important in the incorporation of circuit analysis packages into a universal compiler-based circuit analysis system. Data structure interfaces are a critical part of such a system, since any transformations of associated data structures must be equivalence-preserving.

Efforts to standardize circuit design programs have not been made in the past, and the approaches that are currently in use appear to have just developed with no

rational basis. The methods presented in this study are merely the initial procedures through which the development of a more efficient uniform input language for general network analysis may be obtained.

Notes:

1. Information concerning this innovation may be of interest to computer software designers, suppliers, and users.
2. Requests for further information may be directed to:
Technology Utilization Officer
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Patent status:

No Patent action is contemplated by NASA.

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